The ART
SLA-1 Studio Linear Amplifier

TABLE OF CONTENTS

Safety Precautions **2**
Introduction **3**

Installation **4**
AC Power Hookup 4
Audio Connections 4
Operation Precautions 4

Controls and Indicators **5**
Power Switch 5
Channel Attenuators 5
Signal LED Indicator 5
Clip LED Indicator 5
Protect LED Indicator 5

Connections **6**
¼" Input Jacks 6
XLR Input Jacks 6
Amp Mode Switch 7
Output Binding Post 7
SmartFan™ 7
Fuse 8
AC Power Input 8
Ground Lift Switch 8

Operation **9**

Warranty Information **11**

Service **12**

SLA-1 Specifications **13**

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IMPORTANT SAFETY INSTRUCTION – READ FIRST

This symbol, whenever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure-voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read manual.

Read instructions:
Retain these safety and operating instructions for future reference. Heed all warnings printed here and on the equipment. Follow the operating instructions printed in this user guide.

Do not open:
There are no user serviceable parts inside. Refer any service work to qualified technical personnel only.

Power sources:
Connect the unit to mains power only of the type described in this user guide or marked on the rear panel. The power source must provide a good ground connection.

Power cord:
Use the power cord with sealed mains plug appropriate for your local main supply as provided with the equipment. If the provided plug does not fit into you outlet consult your service agent. Route the power cord so that it is not likely to be walked on, stretched or pinched by items placed upon or against.

Grounding:
Do not defeat the grounding and polarization means of the power cord plug. Do not remove or tamper with the ground connection on the power cord.

Ventilation:
Do not obstruct the ventilation slots or position the unit where the air required for ventilation is impeded. If the unit is to be operated in a rack, case or other furniture ensure that it is constructed to allow adequate ventilation.

Moisture:
To reduce the risk of fire or electrical shock do not expose the unit to rain, moisture or use in damp or wet conditions. Do not place container of liquid on it, which may spill into any openings.

Heat:
Do not locate the unit in a place close to excessive heat or direct sunlight, as this could be a fire hazard. Locate the unit away from any equipment, which produces heat such as: power supplies, power amplifiers and heaters.

Environment:
Protect from excessive dirt, dust, heat, and vibration when operating and storing. Avoid tobacco ash, drink spillage and smoke, especially that associated with smoke machines.

Handling:
To prevent damage to the controls and cosmetics avoid rough handling and excessive vibration. Protect the controls from damage during transit. Use adequate padding if you need to ship the unit. To avoid injury to yourself or damage to the equipment take care when lifting, moving or carrying the unit.

Servicing:
Switch off the equipment and unplug the power cord immediately if it is exposed to moisture, spilled liquid, objects fallen into opening, the power cord or plug becomes damaged during a lightning storm or if smoke odor or noise is noted. Refer servicing to qualified technical personnel only.

Installation:
Install the unit in accordance with the instruction printed in the user guide.

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INTRODUCTION

Thank you for purchasing an ART SLA-1 Studio Linear Amplifier - and congratulations: you now own one of the most versatile amplifiers available. Offering a superb level of sound quality, the SLA-1's clean and powerful circuitry combined with a straightforward user interface quickly and easily delivers the power you need for professional and project studio monitoring.

FEATURES:

- Studio Linear Amplifier
- Extremely Low Noise, Discrete Linear Design
- 100 Watts/Channel @ 8 Ohms
- 260 Watts/Bridged Mono @ 8 Ohms
- Toroidal Transformer
- 10 Hz to 40 kHz within 1dB
- XLR & ¼" Inputs
- Ground Lift Switch
- Silent, Thermal Dependent Cooling System
- Multi-Way Binding Post Outputs
- Low Profile 1U Rackmountable Design
- All Steel and Aluminum Chassis
- Perfect for Pro and Project Studios

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INSTALLATION

The SLA-1 may be used in a wide variety of project and professional studio environments. Self-contained in a steel and aluminum enclosure, the unit is designed for many years of use. For greater reliability, we recommend that you not place the unit directly under or on top of other sources of heat. It is important that any rack-mountable unit is properly ventilated, and the SLA-1 is no exception.

AC POWER HOOKUP

The SLA-1 has an internal power supply designed to operate at 115 VAC @ 50 to 60 Hz. Units manufactured for use outside the United States of America have been modified to comply with the required electrical specifications

AUDIO CONNECTIONS

Audio connections to and from the SLA-1 are balanced XLR [Pin 2 = Hot (+), Pin 3 = Cold (-), Pin 1 = (Ground)] and balanced or unbalanced ¼" [Tip = Hot (+), Ring = Cold (-), Sleeve = (Ground)].

OPERATION PRECAUTIONS

Warning: For optimum performance and reliability, do not operate the amplifier with a speaker load of less than 4 ohms per channel, or any combination of speakers that together are less than 4 ohms.

Using one speaker per channel, it must be rated at 4 or more ohms. Using two speakers per channel, they must each be rated at 8 or more ohms. When in Bridge Mode, the speaker should be rated at 8 or more ohms.

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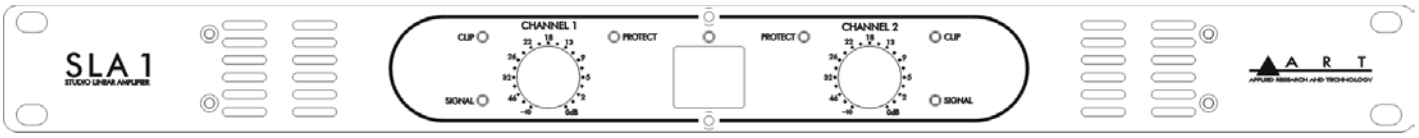
CONTROLS & INDICATORS – FRONT PANEL



POWER SWITCH

The Power Switch is located on the front of the unit, directly in the center. During initial installation, make sure the attenuators for channels one and two are set to a low volume level before applying power.

CHANNEL ATTENUATORS

The dials for channel one and channel two's volume attenuators are located to the left and right of the Power Switch. When set to zero (fully clockwise), there is no attenuation of volume. As the attenuation amount increases by turning counterclockwise, the volume is reduced. Full attenuation is at -infinity. The attenuators are calibrated in dB.

SIGNAL LED INDICATOR

This LED indicates that a signal is present. The LED will glow when the amplifiers output signal is within approximately 30dB of full scale.

CLIP LED INDICATOR

This LED indicates that the Power Amp is clipping. This LED comes on when the output signal from the amplifier begins to distort. When there is significant clipping, lower the input gains to reduce clipping, as well as the risk of damage to the amplifier and speakers/monitors.

PROTECT LED INDICATOR

The LED will glow when the channel goes into protect mode. In protect mode, the output signal to the speakers will be muted (channel specific). If there is a fault condition at the speaker outputs (due to a severe load or short) the LED will light until the fault is removed.

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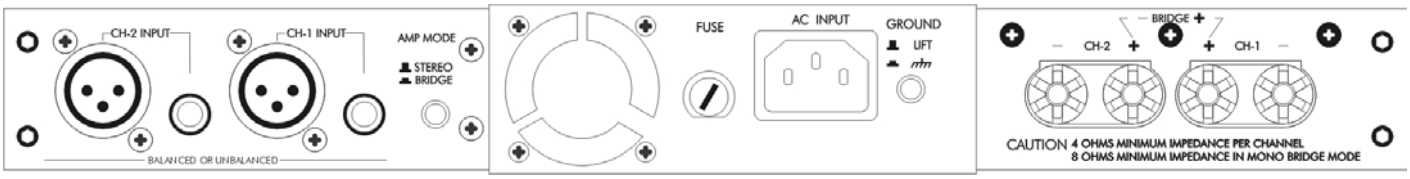
REAR PANEL CONNECTIONS



It is easy to interface the SLA-1 with a wide variety of equipment. All inputs and outputs are located on the rear panel. Standard ¼" and XLR inputs and binding post outputs make patching simple.

INPUTS

The SLA-1 has two styles of input connections: XLR and ¼". Use these connections to connect the output signal from a mixer, preamplifier, crossover, or EQ to the amplifier. The balanced XLR connection is recommended for cable runs longer than 20 feet. For cable runs under 20 feet, the ¼" option may be preferable.

You may also use the two different types of input cables to jump a parallel connection to another amp. For example: connect an XLR cable to the input of channel one, then connect a ¼" cable to the input jack of channel one and jump that cable to the input of another amp.

¼" INPUT JACKS

The ¼" Input jacks are wired as follows: Tip is positive, Ring is negative, and Sleeve is ground. This connection can be used for both balanced and unbalanced connections.

XLR INPUT JACKS

The XLR Input jacks are Pin Two positive, Pin Three negative, and Pin One is ground. This connection is for balanced connections.

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AMP MODE SWITCH

The SLA-1 Amp Mode Switch allows you to choose between Stereo Mode and Bridge Mono Mode. Make sure that power is off and that your speakers are wired appropriately when changing this mode.

OUTPUT BINDING POST

The SLA-1 Outputs for channels one and two are multi-connection jacks. You can use banana jacks, spade connectors or bare wire.

Bare Wire Connections – unscrew the red and black caps on the binding posts (don't completely remove). Strip back the wire cable insulation ½", then inset the bare wire into the hole on the top of the plastic assembly. Once it is in, screw the binding post cap down on the wire. Be sure the wire connected to one post does NOT come in contact with that of another.

Spade Connector – Unscrew the red and black caps on the binding posts (don't completely remove). Insert the spade connector into the binding post and tighten the caps down on the spade connector. Be sure the wire connected to one post does NOT come in contact with that of another.

Banana Plug – Insert the banana jacks into the caps of the binding posts. Be sure that the red and black caps on the binding posts are tightened down completely and that they are securely connected to avoid the possibility of them popping out.

SMARTFAN™

The SLA-1 features SmartFan™, an advanced, thermal dependent convection cooling, silent fan assisted system. The SmartFan™ system is dependent upon the internal ambient temperature inside the unit, and runs at two different levels. The SmartFan™ system is extremely quiet…you probably won't even hear it working.

Do not block the fan or constrict air circulation in any way. Doing so may cause the amp to overheat and/or shutdown.

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FUSE

The SLA-1 utilizes a 7 Amp fuse. Be sure to replace any blown fuses with a fuse of equal rating only.

AC POWER INPUT

The SLA-1 features an internal power supply. Plug the detachable cable into a standard 110~120v wall outlet. Be sure that the supplied voltage matches that of the required voltage of your amplifier. Never plug the amp into an outlet that does not match the required voltage of your amplifier. Serious damage could result.

GROUND LIFT SWITCH

This switch is used to disconnect the internal ground signal from the chassis (case) ground. This may be used to reduce 60Hz noise (hum or buzz). Normally you would ground the chassis, for best shielding. When the SLA-1 is mounted in a grounded rack of equipment, the ground to the case may be lifted to prevent multiple ground paths, which may cause a ground loop to occur.

Fill in the following information for your reference:

Date of purchase _____

Purchased from _____

SERIAL NUMBER _____

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OPERATION

The main application of the SLA-1 is as a studio linear power amplifier for powering monitors. Plug source material directly into the inputs and set the output controls to provide an appropriate level into the next stage of your system (and an excellent choice for this are the ART SLM-1 Studio Linear Monitors).

NORMAL OPERATION

For a typical stereo setup, connect the source (mixer, eq, etc) outputs into channels one and two of the amplifier. Connect your speakers to the outputs on the rear of the amplifier. Be sure that your front gain controls are turned down to their lowest level (full counter-clockwise). Turn the amp on, then slowly turn the input level up. Use your front gain controls to regulate the output volume. Be sure not to raise the volume to the clip level; however, an intermittent clip signal is acceptable.

MONO BRIDGE OPERATION

Be sure the amp is shut off. Press the Stereo/Mono switch (on the back) to the “in” position. Connect an input signal to channel one. Connect your speaker across the red output binding post on the rear of your amplifier. Turn your equipment on – your amplifier should be the last piece you turn on (be sure it’s volume is turned down). Apply an input signal to your amplifier. Use channel one’s attenuator to adjust your amplifier output level.

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PROTECTION

The SLA-1's output circuitry is fully protected from short circuits. An ultrasonic network decouples **RF** from the output and helps keep the amplifier stable with reactive loads.

The SLA-1's heatsinks do most of the work in getting heat away from the amplifier, in normal studio operation. A very quiet, rear mounted variable-speed fan provides extra cooling of the amplifiers internal circuitry as needed. If, in the unlikely event the heatsink should reach 90 degrees Celsius, the amplifier will mute, until it cools down.

The SLA-1 is fully protected from shorts, opens, over-current, and over-voltage. A relay disconnects the outputs under any fault conditions and automatically returns to normal operation once the fault is removed.

The amplifier is stable into loads as low as 2 ohms (stereo mode), and 4 ohms (bridged mono mode).

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WARRANTY INFORMATION

Limited Warranty

Applied Research and Technology will provide warranty and service for this unit in accordance with the following warrants:

Applied Research and Technology, (A R T) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of **three** years from the date of purchase. Applied Research and Technology will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

Exclusions:

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

A R T reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

A R T shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights and you may have other rights, which vary, from state to state.

For units purchased outside the United States, an authorized distributor of Applied Research and Technology will provide service.

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SERVICE

The following information is provided in the unlikely event that your unit requires service.

1) Be sure that the unit is the cause of the problem. Check to make sure the unit has the proper power supplied, all cables are connected correctly, and the cables themselves are in working condition.

2) If you find the unit to be at fault, write down a complete description of the problem, including how and when the problem occurs. Please write down a description of your complete setup before calling Customer Service.

3) Contact our Customer Service Department at (716) 297-2920 for your Return Authorization number or questions regarding technical assistance or repairs. Customer Service hours are 9:00 AM to 5:00 PM Eastern Time, Monday through Friday.

4) Pack the unit in its original carton or a reasonable substitute. The packing box is not recommended as a shipping carton. Put the packaged unit in another box for shipping. Print the RA number clearly on the outside of the shipping box. Print your return shipping address on the outside of the box.

5) Include with your unit: a return shipping address (we cannot ship to a P.O. Box), a copy of your purchase receipt, a daytime phone number, and a description of the problem.

6) Ship only your unit and its power supply (keep your manual!) to:

Applied Research and Technology a Division Yorkville Sound Inc.
4625 Witmer Industrial Estates
Niagara Falls, New York 14305
Attn: Repair Department
RA# _____

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SLA-1 SPECIFICATIONS

Dimensions	1.75”H x 19.0” W x 9.5”D
Weight	13.2 lbs., 6.0kg.
Input Connections	XLR(balanced), ¼”TRS(balanced/unbalanced)
Output Connections	Multi-Way Binding Post
Input Impedance XLR, ¼”	44k ohms (balanced), 22k ohms (unbalanced)
Input Sensitivity	1V for Full Power Output into 8 ohms
Stereo Output Power, 8 ohms	100Watts RMS per Channel,
Stereo Output Power, 4 ohms	130Watts RMS per Channel
Stereo Output Power, 16 ohms	55Watts RMS per Channel
Stereo Output Power, 5.5 ohms	114Watts per Ch, 25V line, unbalanced, direct
Bridged Output Power, 8 ohms	260Watts RMS mono
Bridged Output Power, 16 ohms	175Watts RMS mono
Bridged Output Power, 28 ohms	175Watts mono, 70V line, balanced, direct
Minimum Load Impedance, Stereo	4 ohms (normal operation) , stable to 2 ohms
Minimum Load Impedance, Mono	8 ohms (normal operation) , stable to 4 ohms
CMRR	>60dB (typical @ 1kHz)
Frequency Response	10Hz to 40kHz, +/- .5dB
Hum and Noise	>100dB below clipping
Total Harmonic Distortion (THD)	<0.05% (typical)
Slew Rate	>20V/uS
Damping Factor	>100
Transformer Type	Toroidal
Power Requirements	USA –120VAC 60Hz 600WATTS(max.) JAPAN –100VAC 50Hz 600WATTS(max.) EUROPE –220VAC 50Hz 600WATTS(max.) AUSTRALIA 240VAC 50Hz 600WATTS(max.) Export units configured for country of destination.

ART maintains a policy of constant product improvement. ART reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install same on products previously manufactured. Therefore, specifications are subject to change without notice.

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